

Compliance Assessment Report CAR_NRW0045073

Permit being assessed: AB3096CP.

For: Lamby Way Open Windrow Composting Facility, **held by:** Welsh Water Organic Energy (Cardiff) Limited

At: Lamby Way, Rumney, Cardiff, CF3 4EQ.

Type of assessment: Audit,

Reason: Routine.

On: 01/07/2024 - 28/08/2024.

Parts of permit assessed: Odour Management (3.3.1).

NRW Lead Officer: Geraint Harris.

Report sent to: Adrian Thomas, Contract and Relationship Manager, on 28/08/2024.

1. Summary of our findings (full details in section 4)

Part of permitted activity assessed (compliance criteria)	Assessment result	Permit condition
IR1A - Installations - Management - General Management	C3 Minor	Permit Condition 1.1.1.
IR2C - Installations - Operations - Operating techniques	Action only (X)	
IR2E - Installations - Operations - Improvement programme	Ongoing (O)	Permit Condition 2.4.1
IR4B - Installations - Information - Reporting	C4 No impact	Permit condition 4.2.1.
IR1A - Installations - Management - General Management	C4 No impact	Permit condition 1.1.1
IR1C - Installations - Management - Energy Efficiency	Assessed (A)	
IR1D - Installations - Management - Efficient use of raw materials	Assessed (A)	
IR1E - Installations - Management - Avoidance, recovery and disposal of wastes produced by the activities	Assessed (A)	

Result types are explained in more detail in the 'Important Information' section below.

Total non-compliances recorded	Total non-compliance score
3	4.2

How we use the non-compliance score to calculate your annual fee is explained in the 'Important Information' section below.

2. What action is required?

Criteria	Action needed	Complete by
IR1A	Update your EMS to include a process for controlling treatment volumes to 167 tonnes per day as stipulated in your OMP and permit.	Already completed
IR2C	Implement all of the actions discussed in this CAR Form by the 1st of September 2024 as agreed during an in person meeting the 25th of June 2024.	01/09/2024
IR2E	Provide NRW with the additional monitoring data for IC2 and IC4 by the 18th September 2024	18/09/2024
IR4B	Resubmit the correct forms for energy, water and performance	Already completed
IR1A	Update your EMS with the correct reporting forms and remove the old forms to avoid any repeat situations.	Already completed

Compliance criteria codes are listed in the 'Important information' section below.

3. What will happen next?

Any non-compliance we have identified and recorded on this form is an offence. It can result in criminal prosecution and/or suspension or revocation of your permit.

At this time, we do not intend to take any further action.

This statement does not stop us from taking additional enforcement action if further relevant information comes to light or offences continue.

4. Details of our assessment

<p><u>Welsh Water Organic Energy (WWOE)</u> <u>AB3096CP</u> - <u>Noncompliance</u></p> <p>In their previous compliance assessment report (CAR_NRW0044272) WWOE was asked to provide an explanation regarding why their management system failed to identify an approach to their permit limit and then a subsequent breach in this permit condition with regards to treatment thresholds. Any identified non-compliance with a permit condition is likely to be the symptom of an underlying issue. We assess and record it, but we must also investigate further and try to identify the root cause(s). We categorise a root cause non-compliance on its own merits i.e. it does not have to have the same category as the original breach. In response to this question WWOE replied stating:</p> <p><i>“During this period, due to an ongoing strike in Cardiff CC, collections were being made sporadically and bulk catch up collections were being undertaken. This meant that more waste came in than would normally have</i></p>
--

come in during any normal week / day. There was also a delay in receiving weighbridge data at the time which meant that the site was unaware of how much waste had come into site until much later. To stop this happening again weighbridge data is being received daily and the site operatives can now contact the weighbridge at any point in the day to get an up to date total of waste received. This will allow them to stop processing as they approach the daily limit."

Consequently, the failure to keep on top of waste acceptance quantities through poor management practices, caused a breach of another permit condition listed in the permit. Therefore the root cause can be attributed to the management permit condition 1.1.1. **When considering actual/potential impact this is considered no greater than a category 3 noncompliance.**

Odour Management and Associated BAT Compliance

Following the substantiation of odour complaints on the 8th and 9th of September 2023 (CAR_NRW0042624), a Regulation 61 Notice was issued to WWOE asking for information relating to the monitoring and controlling of key waste and process parameters. The purpose of this request was to ascertain if appropriate measures including, but not limited to, the implementation of BAT were being applied to all aspects of the onsite processes. BAT 36 is of particular importance with this requirement, since it relates to monitoring and/or control of key waste and process parameters for the reduction of emissions to air.

Prior to the substantiation of odours in September 2023 it was agreed, that as a response to BAT 36, a trial comparing two different sized windrows (7m wide x 4m high v's 6m wide x 3m high) utilising a longer probe (2.5metres) could go ahead. NRW viewed the proposed trial as just the starting point of a transition to full BAT/BREF compliance. Therefore, following completion of these trials, if WWOE are unable to demonstrate reliable control and minimisation of the release of odorous gases, including ammonia, NRW would require the use of smaller windrows and tighter process controls for composting as set out in the WT BREF. WWOE provided the results of this trial along with the process data for all windrows for the period January to October 2023 in response to the Regulation 61 Notice. The assessment of WWOE's process data is attached to compliance assessment report CAR_NRW0044272.

In summary, the trial data along with the regular process data demonstrated that when it comes to controlling temperature, aeration, porosity, density and ultimately odours, WWOE were failing to apply the recommended standards stipulated within the relevant guidance's and BREF's (BAT 36). Ultimately WWOE's windrows were too large, too dense and too hot. NRW expect the temperature, oxygen and density levels to be monitored more vigorously and the windrow sizes to be constructed to the dimensions set out within the Waste Treatment BREF.

Following this report, WWOE were subsequently asked to submit an emissions management plan, which may be a revision of their operating techniques, an updated odour management plan or a combination of both, incorporating the BAT requirements described within the report to prevent or minimise the risk of pollution from the composting activities.

In response NRW and WWOE had a pre-submission discussion at the DCWW offices in Newport followed by the submission of an updated OMP and SOP on the 1st of July. Upon review of both documents, WWOE appear to have addressed almost all of the points listed within the conclusion of the Open Windrow Appropriate Measures Investigation report. However, the areas discussed below may need further attention if significant odour or emissions occur.

- Since fresh waste has the highest risk of odour generation due to being very active. NRW require WWOE to monitor the windrows for oxygen, temperature and CO₂ etc from the moment they start to be assembled and to take action when temperatures start exceeding the optimum range of 55°C

to 70°C and oxygen drops below 5%. In response WWOE have agreed to monitor windrows after 72 hours entering batch formation. If it is found that temperatures are already way above 70°C, NRW will request that WWOE reduce this 72 hour period.

- Rigorously monitor temperatures to maintain windrows within the 55°C to 70°C range as required by the BREF and Use temperature range as a guide for temperature control rather than average temperatures and take action to keep windrows below 70°C. In response WWOE have stated that “any average temperatures above 70 degrees Celsius through the windrows will be acted upon, this will mean turning within the next three working days when practicable, in accordance with operating restrictions in the OMP and Environmental Permit.” As with the previous bullet point, if temperatures are found to increase rapidly beyond 70°C, NRW may request that this 3 day period be reduced.
- Proactively undertake odour checks at known sensitive receptors especially when weather conditions enhance the risk of malodours. WWOE have agreed to send an impartial individual to site to undertake odour monitoring once a week. Although this does not completely meet this requirement, it does represent an increased odour check during the spring and summer periods. If odour issues are substantiated from the site, NRW will request that WWOE undertake proactive additional monitoring at locations previously impacted by odour.
- WWOE have stated that windrows will be constructed 3 metres high, 5 metres wide, with a density of 650kg/m³ for the first 5 weeks of the process when the likelihood of odour generation is the highest, then combined during the later stabilisation phase. These will be monitored with a 1.5m probe allowing 96% of the windrow to be monitored. NRW do have some concerns about the potential increase risk of malodour generation during the stabilisation period when the windrows will be larger and more dense as a result of combining two smaller windrows. Especially since the BREF states that “high temperatures for prolonged periods of time after thermal hygienisation may lead to an increase in the formation of odorous substances and ammonia”. Therefore it is essential that strict temperature controls are maintained during this period. In response to this concern WWOE state “A windrow will lose approximately 40% of its mass over the process period, the most rapid loss will occur during the sanitisation phase we estimate around 25 -30%. As a result the windrows will get smaller throughout the process. Combining windrows after 5 weeks will ensure that we can manage CCP's, retain heat and moisture within the batch and satisfy PAS regulations by ensuring the stabilisation of the end product when sampled. These will obviously be much lower than the 70 degrees but need to be maintained above the 30 degree limit”. WWOE also have some concerns around water ingress within their windrow and state “to avoid the windrows becoming unmanageable and in turn avoid difficulties in screening due to excessive moisture in the windrow – it is critical to increase the mass to offset the process loss and prevent unwanted water penetrating deep inside the windrow from heavy rains”. Ultimately NRW still have some concerns about increasing the windrow dimensions beyond BAT after 5 weeks, however, are willing to accept this proposal if the strict control of temperature demonstrates that combining two windrows after 5 weeks has no significant impact on malodour generation. NRW would like to make it clear that should there still be odour issues at the site this area will be re-examined.

NRW accept the responses made by WWOE to the other requirements listed in the conclusions of the Open Windrow Appropriate Measures Investigation report. WWOE agreed to implement the majority of these requirements straight away, However, it was agreed that the implementation of smaller windrows, a new

longer probe and a longer sanitisation period could commence from the 1st of September 2024.

NRW consider BAT 12, 13, 14, 36 and 37 to be complete (see CAR Form CAR_NRW0040817) and have accepted the latest version of their OMP (issue 11) and SOP (version 11). However, please note that once sufficient time has passed NRW will seek to review additional process data to ascertain if the BAT requirements are successfully being implemented and to ascertain if any additional steps are required to improve fugitive emissions and odour control. Going forward if it is determined that WWOE cannot manage emissions sufficiently to minimise offsite odour by application of the requirements of BAT 36, NRW may request additional process control steps and/or additional containment measures as stipulated in BAT 14 and 37. It is important to note that if there is an odour problem at your site, and you have already implemented some measures, there may be a case to justify further measures or restriction of the activity, depending on the severity of the problem and the cost. Even if you are following normal standards and guidance but the impact is unreasonable, then you will have to put in place further measures and we will judge with you what is reasonable and to what extent further measures are possible, required or justified¹. Furthermore, in some cases you may need to go further than industry standards to demonstrate appropriate measures. This may be because the activity is in a particularly sensitive environment, for example close to housing or a protected sites, species and habitats. Or the activity may give rise to more or different types of impacts, such as where you are treating very odorous or smelly wastes, or using hazardous materials².

1. How to comply with your environmental permit. Version 8, October 2014, Page 8.
2. How to comply with your environmental permit. Version 8, October 2014, Page 12.

Table S3.3.

Table S3.3 Process monitoring requirements for composting in open windrows

Emission point reference or source or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method	Other specifications
Waste input characteristics	C to N ratio	None Specified	None Specified	Subject to approved methodology in accordance with improvement condition IC2 BAT36 and as agreed with NRW
	Particle size			
Aeration of the windrow	Windrow turning frequency	None Specified	None Specified	Subject to approved methodology in accordance with improvement condition IC2 BAT36 and as agreed with NRW
	O ₂ and/or CO ₂ concentration in the windrow			
	Temperature of air streams in the case of forced aeration			
	Windrow porosity, height and width			

Since BAT 36 is now complete NRW consider the table above to be complete. The monitoring frequency and methodology are stipulated in the WWOE's OMP issue 11.

Outstanding Requirements

Improvement Condition 2 - BAT 7 (CAR NRW0040817)

There is a requirement to monitor PFOA and PFOS once every six months. This has a caveat within the subtext at the bottom of the BAT 7 stating "The monitoring only applies when the substance concerned is identified as relevant in the wastewater inventory". At the time of publishing CAR Form CAR_NRW0040817 (15/12/2022) work was still ongoing by WWOE to ascertain if PFOA and PFOS were present in their

wastewater inventory. If the results of the PFOS and PFOA are sufficiently low and stable, then the BREF allows NRW to either remove or reduce the requirement to monitor these substances.

On the 1st of November 2023, NRW received 5 sets of monitoring data taken between the 6th of March 2023 and the 10th of August 2023. These contained, amongst other data, measurements for both PFOA and PFOS. Since the ability to obtain representative samples is reliant on sufficient rainfall, it has not always been possible for WWOE to obtain samples. As stated in the EA's guidance for undertaking surface water pollution risk assessments for environmental permits, a minimum of 12 samples are required to make an assessment. Since this part of improvement condition 2 wasn't completed by the required date, but WWOE were taking active steps to complete this assessment, a suspended category 3 non-compliance was applied. Since the last set of data was received on the 1st of November 2023, NRW would like WWOE to submit the additional monitoring data obtained since this date.

Action 1: Please provide NRW with the additional monitoring data by the 18th September 2024.

Improvement Condition 4 (CAR NRW0040817)

IC4 requires the operator to complete and submit for approval in writing by Natural Resources Wales a Phase 1 screening test report for priority hazardous pollutants and any other relevant priority hazardous substances discharged to sewer. As with BAT 7, NRW have received some data but not enough to have sufficient confidence that each of the substance concentrations are truly representative. Due to the continued dry weather in 2023, coupled with issues with the samples sent in late 2022, WWOE had been granted more time to complete this improvement condition. A noncompliance category 3 score was applied against permit condition 2.4.1. since the BATC implementation date in August has now passed. NRW suspended this score since WWOE were taking steps to satisfy this improvement condition. If WWOE fail to complete the required work the suspension maybe lifted, and the score applied.

Action 1: Please provide NRW with the additional monitoring data by the 18th September 2024.

Annual Returns

The annual water and energy performance forms as well as the annual review (condition 4.2.2) were received on the 19/01/2024. These were received by the correct due date, however, they were submitted using out of date forms. This is the second year running that these incorrect forms were used. Since the missing data has no environmental impact this is considered a **category 4 noncompliance against permit condition 4.2.1**. Failure to repeatedly use the correct forms infers that the operator either does not understand their permit, has not read it thoroughly, or does not have easy access to the permit and associated documents. Consequently **a category 4 noncompliance is being issued against WWOE's management system 1.1.1**. As a result of requesting the correct forms WWOE have confirmed that they have now deleted the old forms from their EMS.

Water1:

The sites water is fed from the main Cardiff Council site, there is now a dedicated water meter for the site. This water meter was installed in March 2023 and recorded 168m³ of water use for the remaining part of the year.

Energy1:

Electricity is used to power the office, welfare, outside lighting and the fuel dispenser on site. There is no gas supply to the site. Energy use increased slightly when compared to 2022 but is generally trending lower. The

site used approximately 88.47 tonnes of fuel during 2023. This equates to 0.004150 tonnes of fuel per m³ of waste treated which is an improvement on 2022 (0.00501t/m³).

Annual Energy Usage	
Year	MWh
2023	20.27
2022	19.58
2021	21.09
2020	25.43
2019	25.64

Performance1:

The site treated more waste in 2023 than the previous year. NRW are pleased to read that the composting facility saw a reduction in the quantity of contaminated loads rejected. The generation of wastewater from the site was 12,113m³ which is significantly more than the previous year. However, this mostly includes rainwater runoff from the hardstanding and so this figure is directly proportional to weather conditions.

Air1:

Monitoring only applies when the parameter concerned is identified as relevant in accordance with "M9 – Technical Guidance Note (Monitoring) – Environmental monitoring of bioaerosols at regulated facilities, 2018 Version 2" and following completion of pre-operational measure. Currently this monitoring is not applicable to this site.

Sewer1:

As stated within car form CAR_NRW0040817, work is still ongoing to ascertain what substances/parameters need monitoring if at all. Therefore, until this work has been closed out NRW will not require form Sewer 1 to be completed.

Report 4.2.2.(a)

was also provided on the 19/01/2023. This has been reviewed and accepted.

Waste Returns

The quarterly waste returns for 2023 have each been received on time and are accepted.

END.

If you have any queries about this report, or to discuss completion of any actions, please contact the NRW Officer named above.

Important information

Legal status of this report

Your permit is issued to you under the Environmental Permitting Regulations. You have a responsibility to comply with the conditions of your permit and prevent pollution/harm of the environment. You must also ensure that you comply with any other relevant legislation that may apply to your site's operations.

This report explains the findings of our assessment and any action you are required to take. We categorise non-compliance using our guidance for assessing non-compliance at regulated sites.

When we find potential non-compliance/s we will normally give you advice on how to maintain compliance.

To correct non-compliance, we may:

- require you to take specific actions
- issue a notice
- review the conditions of your permit.

Any advice and guidance we give will be without prejudice to any other enforcement response that we consider may be required.

Assessment results and non-compliance categories (used in section 1):

Assessment result	Description
Assessed (A)	Assessed or assessed in part, no evidence of non-compliance found
Action only (X)	Action only relating to the activity assessment
Ongoing (O)	Ongoing non-compliance, not scored

Non-compliance category	Description	Score
C1 Major	Potential to have a major, serious, persistent and/or extensive impact or effect on the environment, people and/or property	60
C2 Significant	Potential to have a significant impact or effect on the environment, people and/or property	31
C3 Minor	Potential to have a minor or minimal impact or effect on the environment, people and/or property	4
C4 No environmental impact	Non-compliance at a regulated site that cannot foreseeably have any impact on the environment, people and/or property	0.1

How we use assessment scores

The number and severity of non-compliances recorded in a year will affect your annual subsistence fee the following year. A non-compliance factor is added to your site's Operator

Performance Risk Appraisal (OPRA) score when we calculate your fee to reflect the additional resource we use to assess permit compliance.

If your assessment result in Section 1 is suspended, what does this mean?

In line with our guidance, we may suspend scores for up to six months to allow time for remedial action to be taken. Suspended scores will be re-instated if the action is not completed.

Full list of Industry compliance criteria (used in section 1 and 2):

1. Management

- IR1A – General management
- IR1B – Finance (only applicable to Landfill)
- IR1C – Energy efficiency
- IR1D - Efficient use of raw materials
- IR1E - Avoidance, recovery and disposal of wastes produced by the activities
- IR1F - Multiple operator installations

2. Operations

- IR2A – Permitted activities
- IR2B – The site
- IR2C – Operating techniques
- IR2D – Technical requirements
- IR2E – Improvement programme
- IR2F – Pre-operational conditions
- IR2G – Landfill engineering (only applicable to Landfill)
- IR2H – Waste acceptance (only applicable to Landfill)
- IR2I – Leachate levels (only applicable to Landfill)
- IR2J – Closure and aftercare (only applicable to Landfill)
- IR2K – Landfill gas management (only applicable to Landfill)

3. Emission and Monitoring

- IR3A – Emissions to water, air or land
- IR3B – Emissions of substances not controlled by emission limits
- IR3C – Odour
- IR3D – Noise and vibration
- IR3E – Monitoring
- IR3F – Pests
- IR3G – Air quality management plans
- IR3H – Monitoring for the purposes of the Industrial Emissions Directive (this heading includes Large Combustion Plants)
- IR3I – Fire

4. Information

- IR4A – Records
- IR4B – Reporting
- IR4C – Notification

Enforcement response

Any non-compliance with a permit condition is an offence and we may take legal action against you. Action we take can include prosecution, serving a notice on you and/or

suspension or revocation of your permit. See our Enforcement and Sanctions Guidance for further information.

Data protection notice

You should make sure that anyone named in this report knows that the information it contains will be processed by Natural Resources Wales to fulfil its regulatory and monitoring functions and to maintain the relevant public register(s).

We may also use and/or disclose the report in connection with:

- offering or providing you with our literature or services relating to environmental matters
- consulting with the public, public bodies and other organisations (e.g. Health and Safety Executive, local authorities) on environmental issues
- carrying out statistical analysis, research and development on environmental issues
- providing public register information to enquirers
- investigating possible breaches of environmental law
- assessing customer service satisfaction and improving our service
- Freedom of Information Act or Environmental Information Regulations requests.

We may also pass it on to our agents or representatives to do these things on our behalf.

Disclosure of information – this report will be available to view on-line

If you think this report contains commercially confidential information that should not be placed on our public register, you must contact your local Natural Resources Wales office within **fifteen working days** of receiving this report, using the contact details in the accompanying email or letter. You must give a full explanation of why it should not be added to our public register, including specifying which information is commercially confidential. We will assess your request and respond to you within twenty working days to let you know if we agree to your request.

What do I do if I disagree with the report or have a complaint?

If you disagree with this compliance assessment report, you should contact the lead officer without delay to discuss your concerns.

If you are unable to resolve the issue with the lead officer or their line manager you should contact our Customer Contact team on 0300 065 3000 (Monday to Friday 08:00 to 18:00), or email enquiries@naturalresourceswales.gov.uk for details of how to raise your dispute further through our Complaints and Commendations procedure.

If you are dissatisfied with our response, you can contact the Public Services Ombudsman for Wales by phone on 0300 7900203 or by email at ask@ombudsman.wales

Welsh Language Standards

We are committed to establishing Natural Resources Wales as a naturally bilingual organisation. We will provide compliance reports in your preferred language.